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Industrial Education

THE IMPENDING STEP IN AMERICAN  
EDUCATIONAL POLICY

Its Significance for the Boy, the Parent, the  
Community, the State, the Nation

BY

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of the

Wisconsin State Board of Industrial Education

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ABSTRACT

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## Wisconsin State Board of Industrial Education

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# Industrial Education

The Impending Step in American Educational Policy; Its Significance  
for the Boy, the Parent, the Community, the State, the Nation

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H. E. MILES, Racine, Wisconsin

*President Wisconsin State Board Industrial Education*

A school teacher once said to Judge Lindsey of the Juvenile Court in Denver, "Judge, why don't you send this boy to the reform school so he can learn a trade?" This school teacher had no sense whatever of the obligation that rests upon every community to provide practical industrial training to those of its children who need it. Judge Lindsey replied, "Why don't you school people make such provision that a boy can get industrial education without going to a reform school?" That school teacher fairly expressed the public opinion of ten years ago.

Contrast with his attitude that of a Wisconsin Superintendent, Mr. Nelson of Racine, who recently sent this word to a boy of fifteen, who had been two years out of school, the first year as a truant, and influencing other boys to truancy. "Come to see me or I'll send for you." The boy came. Said Mr. Nelson, "How long have you worked in these two years, and how much have you earned?" Said the boy, "I've worked one or two days and earned a dollar and a half." Said Mr. Nelson, "Being past fourteen, the truancy officers can't reach you, but there is a vagrancy law that makes subject to arrest those who persistently loiter and refuse to work. You must attend the industrial school the five hours per week prescribed for those in employment, or you will be arrested for vagrancy." The boy demurred, then consented. The boy and his parents chose a trade for him, Mr. Nelson approving, and after a few days in the school the boy added hour upon hour

voluntarily to his work, and distinguished himself by earnest, enthusiastic, capable performance. He had found himself. Hundreds of boys have done the same.

### Educating the Citizen of Tomorrow

By industrial education it now devolves upon us in very important respects to shape the lives of the children of today, and thereby to make the men and women of tomorrow—the Americans of tomorrow. Each year ~~2,500,000~~ children graduate from our elementary schools, proud and confident in having accomplished the first great task of their lives in successfully finishing the eight years' course with credit. An equal number of children, a vast army of ~~two and a half million~~ little ones, most of them only 14 years of age, leave these same schools discredited, unsuccessful, aimless, most of them having gotten no farther than the sixth grade, having learned little else than the three R's, not educated in any sense, but only possessed of the rudiments whereby real education may be acquired. They have been, in a way, schooled only in how to fail. These are the children who go into the industries, and deserve and require industrial or trade education.

### The System Once Good Now Outgrown and Misdirected

The American system of common school education in its earlier years was the wonder and admiration of the world. President Eliot rightly described it as one of America's five great contributions to civilization.

It brought general knowledge to the masses with the ability to read, write, and compute. It found the industries adequately supplied with artisans of great skill. The artisans of those days took small part in public affairs. Their pleasure and their prospect of advancement lay in their skill. Apparently it was taken for granted that skill would be continued without being made a part of the system of general education. This left that system to extend only the cultural side of life without respect to the workaday side of efficiency and material accomplishment.

Today it is evident that instead of having the best system of common school education, we have one of the poorest. The minds of our youth have been so wholly turned to the cultural side that they have come to think that vocational training, and indeed the vocations themselves, is negligible if not undesirable. Our system has developed a great taste for politics, for the study of social problems,

and we might add, for the yellow penny paper, and an equal distaste for the earnest all-compelling conquest of a trade or occupation, and worse yet, a distaste for hard work. Love of work used to be, and with some still is, a consuming passion. All worthy work is divine. To the old time artisan, work brought divine joy. He complied with the precept of Solomon, "Wherefore I perceive there is nothing better than that a man should rejoice in his work for that is his portion." What profiteth a child if he can read the penny paper but cannot use mind and body happily and efficiently for his own maintenance and for the good of his associates and the state? Is a child really educated until he can so apply himself? The more thoughtful nations of Europe say no. We, of the United States, have been so asleep in this matter that we are not prepared to answer.

Our whole educational system rests upon the accepted doctrine that it is the duty of the state to educate every child that he may become an intelligent, useful member of society. It rests upon the expectation that substantially all the children go through the elementary schools, and a very great proportion of them through the high school.

How utterly untrue our system is to this principle is evidenced by the fact that less than half our children go beyond the sixth grade. Only one in three completes the grammar school course, only one in five enters the high school, and only one in thirty graduates from the high school. Our system then does not educate generally nor thoroughly. Taken as a whole it is comparable to a trans-oceanic liner, half of whose passengers drop out midway and only one-thirtieth of whom reach the port of destination.

### Work and Vocational Preparation

Most of these children who quit school in the midst of their studies go to work; some upon the compulsion of earning a living. Indeed, all of them should turn to some occupation for their own sakes as against the temptations of idleness and dissipation. The great majority of them either enter the cursory occupations or perform such simple tasks as are detrimental to mind and character. The Wisconsin Bureau of Labor in its report for 1910 declares that only twelve per cent of the children employed under sixteen years of age are in positions where they can learn a trade.

One-half of all our children are therefore abandoned by the

state, educationally, at the tender age of fourteen, and substantially all of the children are neglected so far as trade education goes.

We are told that the Master left ninety and nine to find one; the American school must, in this sense, leave in his security the thirtieth child who will graduate from the high school and go out after and save the twenty-nine who drop out meantime, and the fifty per cent who drop out at the end of the sixth grade. If we had to depend upon theory only, our course would be uncertain, but fortunately, the experience of all other great industrial nations, England alone excepted, clearly points the way. Let us consider Germany, for instance, though it is a question whether she is any further advanced in this respect than Austria, Belgium, or France. Germany apparently prefers that the great body of her children shall enter the industries at the age of fourteen. The point is that the state goes into the industry with the child; the hand of the child is kept within the hand of the state; the child is led and directed continuously from the time of his entrance into the industry until he is seventeen or eighteen years old. Instructors watch the child in the factory and, upon compulsion of the law, every child goes back into the school from the shop for a period of from seven to ten hours a week.

### The Continuation School

The school to which he goes is called the Continuation School, for in this school his education is "continued." The shop practice of every trade is secured in the factory. The factory and all other work places are made marvelously efficient factors in the system of education. The Continuation Schools, unlike our trade schools with their enormous investments in machinery, are for the most part devoid of machinery or apparatus beyond that common to a school desk or counting room. In the Continuation School only the science and art of the trade is taught. The child there learns the relations of his particular factory task to the whole of his industry. He is taught scientifically the higher reaches of his industry, and, up to the limit of his ability, is made an accomplished and scientific factor in his industry. The work places in turn are greatly influenced by this system. The children carry into their work the teachings of the school. As in Cincinnati, where this system has been applied, the foremen are concerned in finding their boys possessed of practical and scientific ideas and short cuts not



known to the foremen themselves. This has resulted in continuation classes of the foremen and the betterment of the whole shop practice.

### Continuation vs. Trade Schools

The almost inconsiderable investment in these Continuation Schools, their dependence upon the factories for practice and equipment, enables the European Industrial School to teach all the industries of each community. Consequently every child who wishes, becomes a skilled employee in the local industry of his preference, and per contra, every home industry finds skilled, eager workers in the children of its community. Our trade schools, most expensively equipped, many of them costing a quarter of a million dollars or more, expend for maintenance alone from \$180 to \$250 per year per student. American-like, we have found it easier to spend great sums this way than to go to the bottom of the question and accomplish five times more at a nominal expense. The Continental Continuation School represents in many cases almost no investment except for buildings, and for the most part, the day school buildings are used. There should, however, in all schools, be installed sufficient machinery to illustrate the basic operations of a trade, and for the use of children who are not in employment. The cost of maintenance per scholar per year is about \$15, or one-tenth the cost in our trade schools, and one-half the cost in our present common schools. The scholar should spend at least one-half day per week in the Continuation School and this might properly be on Saturday when the buildings are not in use. Attendance should be compulsory, not in the sense of the policeman's club and the jail, but in the sense of recognition by statute of high social obligations and of the increase of the happiness, efficiency, and prosperity of the citizens and the state.

### Efficiency and the Love of One's Work

Love of work comes of efficiency in work. We like to do what we can do well. In neglecting to give efficiency to the working girls and boys the state has committed an immeasurable sin of neglect.

It is not enough to make a child a competent industrial worker. He must also be made a worthy member of society. He must be taught his rights and his obligations to himself, his fellows, and the state. Courses in "Citizenship" are an important part of train-

ing in Continental Industrial Schools. Children are taught to understand and appreciate the ordered processes of the law. The brassmakers of Birmingham sent a delegation to examine German working conditions. They reported: "We have frequently been asked 'wherein lies the cause of the better social conditions of the Berlin brass workers?' The answer is summed up in the words, 'duty, responsibility, discipline, work, order, and method.' These qualities are much in evidence among the officials and employers of labor and the work people." Contrast this with the American situation, with the unrest, the shirking, and the hate of work of a great portion of American workers. The Continental Schools also include courses in hygiene, the structure of the body, its nourishment, care and cleanliness; in deportment at home and in society, towards teachers and helpers; sanitation; social legislation; trade and commerce and their relation to the well-being of the workers and to society.

The task method is used in these schools. A course consists, for instance, of thirty tasks. A boy who can give all his time to the school goes correspondingly faster than a little bread winner who can give only a few hours a week. Neither child is retarded by the other. They work side by side at minimum expense and without friction.

### Trade School Contribution

Our few great trade schools have their purpose; and fortunate is the community that possesses one. It is, however, astonishing that a people supposedly so intelligent, has trusted so completely to the so-called trade school, with its enormous investment, for the ultimate solution of this problem. Ignorance is often marvelously complacent. The trade school necessarily limits its instruction to a few trades, commonly these four: wood-working, metals, plumbing, and brick-laying. By what right is the money of the community devoted to four trades only, and to the children of such taxpayers as elect those trades? By what right are all other children deprived similar education? How can a state prosper with here and there a smattering of instruction in four trades and a mere "pick-up", cursory understanding of others? How can such a nation expect to persist satisfactorily in world competition against Germany, for instance? If four trades should be taught, all should be taught; if some children should be taught, all should

be taught. In Germany every trade is taught. In Munich, for instance, at very little expense and with marvelous efficiency, forty-seven trades are taught, including printing, lithographing, photography, stucco and ornamental sculpture, tinsmith, bather, wig-maker, baker, hotel-keeper (including hotel carving), wood-carver, jeweler, merchant (including buying and selling), confectioner, pastry cook, butcher, tailor, clerk and office assistant, druggist, glazier, coachman, saddler, trunk-maker, cooper, upholsterer, potter, stove-maker, wheelwright, and watch-maker.

The American people are given to much procrastination. They are one of the most conservative peoples in the world. When they do decide to act, however, they usually act with surprising promptness and effectiveness.

The whole country is now aroused to this pressing need. There is every reason why action should be immediate. For one, the children can't wait. We are concerned particularly with children of the ages of 14 to 16. A million children about 15 years of age, must be cared for this next twelve months or they will have passed the period when we will be likely to reach them. Another million will have passed from 14 years to 15, and the time in which we may benefit them will have been reduced to a single year.

### Foreign Competition

Again, we should act at once because of the stress of foreign competition. We are twenty-five years behind most of the nations that we recognize as our competitors. We must come nearer to the level of international competition. As every manufacturing establishment must have a first-class mechanical equipment and management, so also it must have in its workmen skill equal to that of competitors, domestic or foreign. The native ability, the intuitive insight, courage and resourcefulness of American workmen is quite unsurpassed. They are brothers to "the men behind the guns." It is their misfortune that they have not been given by their country that measure of technical instruction that is their due. They are by no means equal in technical skill to the workers of continental Europe. From general neglect they have been deprived of one of their birthrights, the right of every American to a thorough and effective education up to the limit of his reasonable requirements.

## America an Industrial Nation

We have become an industrial nation. Our farmers will soon be busy in supplying home requirements, while our industries must reach out over all the world for trade. There are only four great manufacturing nations in the world: England, France, Germany, and the United States. In volume of output the United States is in the lead. Outside these four nations there are one and one-half billion human souls who look to these nations for their manufactured supplies. The rewards offered in this world-trade are beyond comprehension. They are to be measured in money, in intellectual advancement, in national spirit, in heightened civilization. And yet in this world-trade the United States has, until now, refused to participate.

You will answer that we have a large foreign trade, and so we have, but an analysis of the figures is more than surprising. In 1907-08 we exported \$1,082,000,000 of manufactured products, but of this 63 per cent, or \$680,000,000, were of crude and semi-crude materials, including such fruit-stuffs as flour, meat, etc., \$332,000,000; copper in bars, wire, etc., \$104,000,000; iron and steel in bars, billets, rails, etc., \$48,000,000; petroleum and other mineral oils, \$98,000,000; wood in its crude forms, \$63,000,000; leather, furs, and fur-skins, \$34,000,000; etc. Such exports carry only from three to fifteen per cent of factory labor. German, French, and English exports carry forty to eighty per cent. This left only \$402,000,000 of more highly finished manufactures, representing only one sixtieth of our total product of farm and factory, and one-fortieth of our manufactured products. These figures have changed in amounts since 1908, but the story they tell is the same.

As a people we are ignorant of foreign trade. America has been likened to a huge stevedore bearing down to the ships of the sea, crude and semi-crude material for the use of the capital, labor, and intelligence of foreign nations. Such exportation is a depletion of our natural resources, resources which are the heritage of the ages, and cannot be replaced. Until a few years ago we were always speaking of our "limitless natural resources." We now see that under present processes those resources will be exhausted within a period that to the farsighted is as a day. We have been proud of our agricultural exports; the scientists now tell us that every bushel of wheat exported carries with it 27 cents worth of

phosphorus; every bushel of corn 13 cents; every pound of cotton 3 cents. These figures equal the supposed profits in the transaction. As President Wallace said at the recent Conservation Congress, "The nineteenth century farmer was no farmer at all, he was a miner, mining the fertility of the soil, and selling it for the bare cost of the mining." We sell our cotton to Switzerland at 14 cents a pound, with scarcely any labor in it. We buy it back in the form of fine handkerchiefs at 840 a pound, all labor. We must acquire the skill of the foreigner to the end that our exports shall carry the maximum and not the minimum of high class labor.

### Providence and Social Intelligence

Providence has been kind to us, but Providence is likely now to leave us a little more to our own intelligence. The human or vital resources of the United States are estimated by Professor Fisher as of the incomprehensible value of \$250,000,000,000. We must now to the utmost degree develop these human efficiencies. In them is a natural resource, and the only one, that increases with use, and will increase forever and immeasurably. Other nations, lacking our raw materials, make the cultivation of their human resources the substantial basis of their prosperity and happiness.

These considerations arouse in the manufacturers equally with all other intelligent classes, the highest sentiment, a real inspiration for great accomplishment in the general interest. The nation must rise or fall as it develops its human efficiencies, and the manufacturers will go up or down with the rest.

The manufacturers are one in judgment with the leading educators and workers of the country in demanding that industrial education shall be extremely practical. They want it to bear upon its face the grime of the factory and the stress of the store and the counting room. It must be free from any slightest touch of sentimentality. Work is real; work is hard. A love of work must be developed, replacing a present love of ease. Joy must come, whatever we are to have of it, not from ease and idleness, but from successful accomplishment, from work well performed.

### The New Coöperation

A new relationship must be established between the factories and stores and the industrial schools now to be established. The manufacturers must in a measure, accommodate their shops to the

use and purpose of the industrial schools, and the schools in turn must be adjusted to the requirements of the factories. Only in this way will there come the perfection of practical accomplishment. As is said in England, an efficient workman cannot be made in a school, neither can he be made without a school. In our shops is sufficient machinery for the education in practice of all the youth of the land. This will save the schools from any considerable investment in machinery, and make the cost of such education relatively very small. On the other hand, the instruction of the school in the science and art of the industry will make every child at work, and the men too, understand the relationship of their several tasks to the whole of the industry, and the way of advancement from the task in hand to the highest position that their developing faculties will entitle them to. This will greatly relieve present friction and misunderstanding and develop an intelligent sense of mutual dependence.

### Social Obligation vs. Self-Interest

The manufacturers are not selfish in desiring this new form of education. Indeed it is to be feared some of them will regret the inconvenience the inauguration of the work will bring upon them.

A manufacturer is, in a sense, only a middleman. He takes such labor and material as come to hand. He combines them into such products as their qualities and his management permit. Be those products of high grade or low, the intelligent manufacturer will get his toll and his profit. He wants industrial education in the interest of his business, but infinitely more in the interest of all the people and the common weal. The years will soon make of us a new people by means of this education, and we will have no interest in measuring who is most benefited.

Industrial education is of such controlling importance to the nation, state, and community, that it should have the financial and intellectual support of each in its sphere. There should be federal appropriations, and oversight of a general sort.

Each state in a commanding way should, and in time must, establish a thorough-going system of industrial education, comparable in general to the present common school system. It must appropriate from its treasury sufficient funds for the general direction of the system, and for local encouragement.

This leaves the local community to furnish, as it should, the greater amount of money for its own schools.

Wisconsin has recently provided for these schools for scholars of all ages, with compulsory attendance for five hours each week without loss of wages for all apprentices and for children in employment from 14 to 16 years of age—those upon the farms excepted.

These and other equally important provisions in her new laws mark an epoch in our educational history. The child of the working man now comes into his own educationally, for all the states are preparing to vie with one another in this direction.







